

CLAIMS

1. Rimless spectacles comprising
a pair of lenses (1),
5 a bridge piece interconnecting the respective lenses (1),
a pair of hinge pieces (2) arranged at the outer side edges (9) of the two lenses
(1), and
a pair of temples each having a hinge connecting element for connecting each
temple to a respective hinge piece (2),
10 **characterised in that**
each hinge piece (2) comprises an abutment part (4) having an abutment surface (7,
14) extending parallel to and in abutment with a side surface (5) of the respective
lens (1),
that each respective lens (1) is provided with at least two holding holes (10,
15 11), which open to said side surface (5) thereof,
that at least two corresponding pins (8, 8') are fastened to the abutment part (4)
of each hinge piece (2) and extend into said holding holes (10, 11) of the lenses (1),
and
that the at least two pins (8, 8') are rigidly connected to the inner side surfaces
20 of their corresponding holes (10,11).
2. Rimless spectacles according to claim 1, wherein said at least two pins (8, 8')
extend from the abutment surface (7, 14) where the surface (7, 14) is in abutment
with the side surface (5) of the respective lens (1) and into the holding holes (10, 11).
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3. Rimless spectacles according to claim 1 or 2, wherein said pins (8, 8') are in a
close fit with the corresponding holding holes (10, 11).
4. Rimless spectacles according to claim 3, wherein the close fit is a transition fit or
30 preferably an interference fit.

5. Rimless spectacles according to claim 3, wherein the close fit is a tapering fit.
6. Rimless spectacles according to claim 5, wherein the tapering fit is a conical fit.
- 5 7. Rimless spectacles according to any of the preceding claims, wherein an adhesive is provided between said pins (8, 8') and the inner side surfaces of the corresponding holes (10, 11).
- 10 8. Rimless spectacles according to any of the preceding claims, wherein an adhesive is provided between said abutment surface (7, 14) of the abutment part (4) and said side surface (5) of the respective lens (1).
- 15 9. Rimless spectacles according to any of the preceding claims, wherein said side surface is the front side surface (5) of the respective lens (1).
10. Rimless spectacles according to any of the preceding claims, wherein said holding holes (10, 11) extend from said side surface (5) of the respective lens (1) to the opposite side surface thereof.
- 20 11. Rimless spectacles according to any of the preceding claims, wherein said hinge pieces (2) are cut from sheet metal.
12. Rimless spectacles according to claim 11, wherein at least one of said pins is
- 25 formed integrally with said hinge pieces (2) from a blank of sheet metal as tabs (8').
13. Rimless spectacles according to claim 12, wherein said tab or tabs (8') are bent to extend inwardly from the abutment surface (7) of the abutment part (4).

14. Rimless spectacles according to claim 12 or 13, wherein at least one of said pins (8) is made from metal wire, which is fastened to said abutment part (4).

5 15. Rimless spectacles according to any of the preceding claims, wherein each of said lenses (1) is provided with an indentation (12) in said side surface (5) thereof, the surface of which indentation (12) is in abutment with said abutment surface (7, 14) of the respective hinge piece (2).

10 16. Rimless spectacles according to claim 15, wherein the depth of said indentations (12) and the thickness of the hinge pieces (2) are of similar dimensions, so that the outer side surface of the hinge pieces (2) is substantially flush with said side surfaces (5) of the lenses (1).

15 17. Rimless spectacles according to any of the preceding claims, wherein the hinge pieces (2) are made from

a first metal wire (16) extending parallel to said side surface (5) of the respective lens (1), the outer end of the first metal wire (16) being bend to form a first pin (8) extending inwardly into a corresponding first holding hole (10) of the lens (1), and

20 a second metal wire (17) extending parallel to said first metal wire (16), the outer end of the second metal wire (16) being bend to form a second pin (8) extending inwardly into the corresponding second holding hole (11) of the lens (1), wherein the first metal wire (16) and the second metal wire (17) are fastened to each other along the distance (18) they extend in parallel.

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18. Rimless spectacles according to claim 17, wherein the second metal wire (17) extends between said side surface (5) of the respective lens (1) and said first metal wire (16).

19. Rimless spectacles according to claim 15 and to claim 18, wherein said indentation (12) is dimensioned to accommodate the second metal wire (17).

5 20. Rimless spectacles according to claim 19, wherein said indentation (12) is dimensioned so that the part of the first metal wire (16) extending beyond the second pin (8) and to the first pin (8) is in abutment with said side surface (5) of the respective lens (1).

10 21. Rimless spectacles according to any of the preceding claims, wherein the edges of the holding holes (10, 11) facing the abutment part (4) are chamfered.

15 22. A hinge piece (2) suitable for being arranged at the outer side edge (9) of a spectacle lens (1) and having an abutment part (4) with an abutment surface (7, 14, 15) extending parallel to a surface (5) of the intended lens (1), which hinge piece (2) is cut from sheet metal and comprises at least one pin (8, 8') formed integrally with the hinge piece (2) from a blank of sheet metal as a tab (8'), which at least one pin (8, 8') extends from said abutment surface (7, 14, 15) and into a corresponding holding hole or holes (10, 11) of the intended lens (1) opening to said side surface (5) of the lens (1).

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23. A hinge piece according to claim 22, wherein the at least one tab (8') is bent to extend inwardly from the hinge piece (2) relatively to the intended lens (1).

25 24. A hinge piece according to claim 22 or 23, comprising at least two of said tabs (8').

25. A hinge piece according to any of claims 22-24, comprising at least one pin (8) made from metal wire, which is fastened to said abutment part (4) and extends from

said abutment surface (7, 14, 15) and into a corresponding holding hole or holes (10, 11) of the intended lens (1) opening to said side surface (5) of the lens (1).

26. A hinge piece according to any of claims 22, 24 or 25, wherein the at least one
5 pin (8, 8') extends in the plane of the abutment part (4) parallel to the side surfaces (15) thereof.

27. Rimless spectacles comprising

a pair of lenses (1),
10 a bridge piece interconnecting the respective lenses (1),
a pair of hinge pieces (2) arranged at the outer side edges (9) of the two lenses (1), each hinge piece (2) having an abutment part (4) with an abutment surface (7, 14, 15) extending parallel to a surface (5) of the corresponding lens (1), which hinge piece (2) is cut from sheet metal and comprises at least one pin (8, 8') extending
15 from said abutment surface (7, 14, 15), and
a pair of temples each having a hinge connecting element for connecting each temple to a respective hinge piece (2),
wherein each respective lens (1) is provided with at least one holding hole (10, 11), which opens to said side surface (5) thereof and corresponds to the at least one pin
20 (8, 8') of the respective hinge piece (2), each respective lens (1) is provided with an indentation (12) in said side surface (5) thereof, the surface of which indentation (12) is in abutment with said abutment surface (7, 14, 15) of the respective hinge piece (2), and the at least one pin (8, 8') is rigidly connected to the inner side surfaces of the corresponding holes (10, 11) and the abutment surfaces (7, 14, 15) are rigidly
25 connected to the corresponding surfaces of the respective indentations (12).

28. Rimless spectacles according to claim 27, wherein the depth of said indentations (12) and the thickness of the abutment parts (4) are of similar dimensions, so that the outer side surface of the hinge pieces (2) is substantially flush with said side surfaces
30 (5) of the lenses (1).

29. Rimless spectacles according to any of the claims 27-29, wherein the edges of the holding hole or holes (10, 11) facing the abutment part (4) are chamfered.

5 30. A hinge piece (2) suitable for being arranged at the outer side edge (9) of a spectacle lens (1), which hinge piece (2) is made from

a first metal wire (16) extending parallel to said side surface (5) of the intended lens (1), the outer end of the first metal wire (16) being bend to form a first pin (8) extending inwardly into a corresponding first holding hole (10) of the lens (1), and

10 a second metal wire (17) extending parallel to said first metal wire (16), the outer end of the second metal wire (17) being bend to form a second pin (8) extending inwardly into a corresponding second holding hole (11) of the lens (1), wherein the first metal wire (16) and the second metal wire (17) are fastened to each other along the distance (18) they extend in parallel.

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31. A hinge piece according to claim 30, wherein the second metal wire (17) extends between said side surface (5) of the intended lens (1) and said first metal wire (16).